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HYMENOXYS HERBACEA (ASTERACEAE): AN ENDEMIC SPECIES OF THE GREAT LAKES REGION

ALLISON W. CUSICK

ABSTRACT

Hymenoxys herbacea (*comb. nov.*), a federally-listed, threatened species endemic to Illinois, Ohio, and Ontario, has been treated formerly as *H. acaulis* var. *glabra*. *Hymenoxys herbacea* is a self-incompatible aneuploid with $x = 14$, genetically and morphologically separable from *H. acaulis*. The nomenclatural history of this taxon is summarized.

Key Words: *Hymenoxys herbacea*, *Hymenoxys acaulis* var. *glabra*, new combination, endemic, aneuploid, Great Lakes region

Hymenoxys herbacea (E. L. Greene) Cusick [*comb. nov.* based on *Tetraneuris herbacea* E. L. Greene, Pittonia 3: 268, 1896] (Asteraceae) is a showy scapose perennial herb endemic to a limited area of the Great Lakes region. Three populations presently are extant, two in Ontario and one in Ottawa County, Ohio. It formerly grew in Tazewell and Will Counties, Illinois. A report from Mason County, Illinois is in error (Cusick and Burns, 1984; Sheviak, 1981; White and Maher, 1983). The species is known as Lakeside daisy after the town of Lakeside, Ohio, near the Ottawa County population (Weed, 1890).

This species is closely allied to *Hymenoxys acaulis* (Pursh) Parker which grows over a broad area of the western half of the Great Plains from Saskatchewan to Texas and west to California. The Great Lakes populations of *Hymenoxys herbacea* are disjunct from *H. acaulis* by 900 to 1400 km. Parker (1950) without comment reduced the Great Lakes plants to varietal status as *Hymenoxys acaulis* var. *glabra* (A. Gray) Parker.

DeMauro (M.S. thesis, Univ. of Illinois at Chicago, 1988), who investigated the genetics of Lakeside daisy populations in Illinois, Ontario, and Ohio, cast doubt on Parker's treatment. The Illinois plants used in her study were from the last remaining natural population in the state prior to its destruction in 1981. DeMauro found *Hymenoxys herbacea* to be a self-incompatible, reduced aneuploid with $x = 14$. The base number in *Hymenoxys* is $x = 15$ (Strother, 1966). *Hymenoxys acaulis* has been listed variously as $x = 14$, $x = 15$, and $x = 30$ (DeMauro, *op. cit.*).

Hymenoxys herbacea morphologically is distinguished from *H. acaulis* by a paucity of villous pubescence. This feature is most evident on the rosette leaves. Leaves of *H. herbacea* are deep green and sparsely pubescent, becoming glabrate with age; those of *H. acaulis* are dull green and densely and permanently cloaked with long, silky hairs.

The ancestors of *Hymenoxys herbacea* probably migrated from the western cordillera into the Great Lakes region during the Xerothermic interval about 8000 years B.P. This period marked the eastward expansion of many drought-tolerant western taxa, a phenomenon known as the prairie peninsula (Transeau, 1935; Webb et al., 1983). Lakeside daisy probably became physically and genetically isolated from its progeners when more humid weather conditions developed in the Midwest about 4000 B.P. Aneuploidy may have arisen independently in the Great Lakes populations or it may have originated in western populations of *Hymenoxys* that subsequently migrated eastward during the Xerothermic interval. Powell and Turner (1963) reported isolated $x = 14$ aneuploids of *Hymenoxys acaulis,* although they did not record which varieties of that taxon were sampled.

The nomenclatural background of *Hymenoxys herbacea* is summarized below:

Actinella scaposa Nutt. var. *glabra* A. Gray (Man. ed. 5: 263, 1867).
Tetraneuris herbacea E. L. Greene (Pittonia 3: 269, 1896).
Actinea herbacea (E. L. Greene) Robinson (Rhodora 10: 68, 1908).
Actinea scaposa (Pursh) Spreng. var. *glabra* (A. Gray) Cronquist (Rhodora 47: 403, 1945).
Hymenoxys acaulis (Pursh) Parker var. *glabra* (A. Gray) Parker (Madroño 10: 159, 1950).

Gray's 1867 epithet "*glabra*" cannot be used at the species rank since Shinners (Field and Lab 19: 80, 1951) used that adjective for another species of *Hymenoxys,* based upon Nuttall's *Actinella glabra* of 1841 (Trans. Amer. Philos. Soc. n.s. 7: 379). Nuttall's name is the basis for *Tetraneuris glabra* (Nuttall) E. L. Greene (Pittonia 3: 268, 1896). The confusion surrounding the epithet "*glabra*" is reflected in the high number of references which misattribute that adjective to Nuttall rather than Gray when referring to Lakeside daisy (Gleason and Cronquist, 1963; Mohlenbrock,

1975; Sheviak, 1981; Roberts and Cooperrider, 1982; Fisher, 1988).

Hymenoxys herbacea is listed, as *H. acaulis* var. *glabra,* as threatened in the United States (USFWS, 1988), and as endangered by the state of Ohio (ODNAP, 1990). The recognition of its rarity has spurred research into the biology and taxonomy of this Great Lakes endemic.

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DIVISION OF NATURAL AREAS AND PRESERVES
OHIO DEPARTMENT OF NATURAL RESOURCES
FOUNTAIN SQUARE
COLUMBUS, OH 43224